# Bluewater Wind

An NRG Company

## Offshore Wind Development

# Safe Harbor Statement

This Presentation contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements are subject to certain risks, uncertainties and assumptions and typically can be identified by the use of words such as “expect,” “estimate,” “should,” “anticipate,” “forecast,” “plan,” “guidance,” “believe,” “will” and similar terms. Such forward-looking statements include information relating to Bluewater Wind, an NRG Company, and NRG’s offshore wind development strategy and projects. Although NRG believes that these expectations are reasonable, it can give no assurance that these expectations will prove to have been correct, and actual results may vary materially. Factors that could cause actual results to differ materially from those contemplated above include, among others, general economic conditions, hazards customary in the power industry, weather conditions, construction delays, competition in wholesale power markets, the volatility of energy and fuel prices, failure of customers to perform under contracts, changes in the wholesale power markets, changes in government regulation of markets and of environmental emissions, the condition of capital markets generally, and the inability to implement value enhancing improvements to plant operations and companywide processes.

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# Offshore Wind Energy

- About Bluewater Wind
- A Case Study – Delaware
- Why Offshore Wind
- The Development Process
- Offshore Construction

BluewaterWind℠

Bluewater Wind is a developer of offshore wind energy committed to bringing clean, reliable and affordable electricity to New York, Delaware, Maryland, New Jersey, New England and the Great Lakes.

# NRG BLUEWATER WIND OVERVIEW

## Overview

- **Leading offshore wind developer**
  - 293 MW contracted under long term PPAs with Delmarva, DEMEC and State of Maryland (only commercial offshore wind PPAs in U.S.)
  - 350 MW preferential development right and $4 MM met tower rebate in New Jersey
  - Over 3,300 MW in additional development
- **Wholly-owned subsidiary of NRG Energy Inc.**
- NRG Energy Inc.
  - Added to **S&P 500** group Feb 2010
  - Platt's 2007 Recipient of Energy Company and Industry Leader of the Year
  - Fortune 500- Ranked 12th Fastest Growing Company (2009)
  - Fortune 500- Ranked in top 10% for "Best Investment" (2008)
  - Listed: NYSE (NRG)
  - Market Cap.: **~$6 billion**
  - Employees: ~4,500
  - Generating Assets: **~23,000 MW,** primarily in four U.S domestic regions

## Significant Milestones

- 2006-2007: Bid DE, beating coal and gas to win right to negotiate 200 MW PPA
- Sept. 2007: B&B purchased controlling interest in Bluewater
- June 2008: Signed first U.S. offshore PPA with Delmarva Power
- July 2008: Began lease and permitting process for 2 met towers
- Jan. 2009: Secured $4 MM met tower rebate in NJ
- April 2009: MMS regulations from Department of Interior issued
- June 2009: Received 2 met tower leases for NJ and DE projects
- November 2009: NRG Energy buys Bluewater Wind
- December 2009: won 55 MW expansion of DE from University of Maryland/MEA

# The Bluewater Wind Team Development Team Members

- Meteorologists
- Geologists and geo-technical professionals
- Electrical engineers and grid interconnection specialists
- Foundation structural engineers
- Construction, transport and logistics specialists
- Wind turbine manufacturers
- Marine and avian biologists
- Project equity investors
- Bank debt analysts
- Legal and insurance professionals

# Delaware
## A Case Study

# The Country's First Offshore Power Purchase Agreement

- 200MW signed 25-year PPA between Bluewater Wind & Delmarva Power
- Energy - $98.93/MWh (2007$)
- Capacity - $70.23/kW year
- RECs - $15.23/MWh plus REC multiplier
- 2.5% annual inflation adjustor
- 70 cents – average monthly customer cost impact (PSC, real levelized 2007$)

# Path to the PPA

- State Legislature passes House Bill 6 mandating:

  - Delmarva Power issue RFP for new generation that will bring price stability to ratepayers

  - DE PSC to mediate the competitive bidding process

  - Winning bidder wins right to negotiate long-term contract with Delmarva
- Bluewater unanimously chosen by state agencies as best proposal
- Bluewater negotiates PPA with Delmarva

# Positive Economic Impact Coming to Delaware

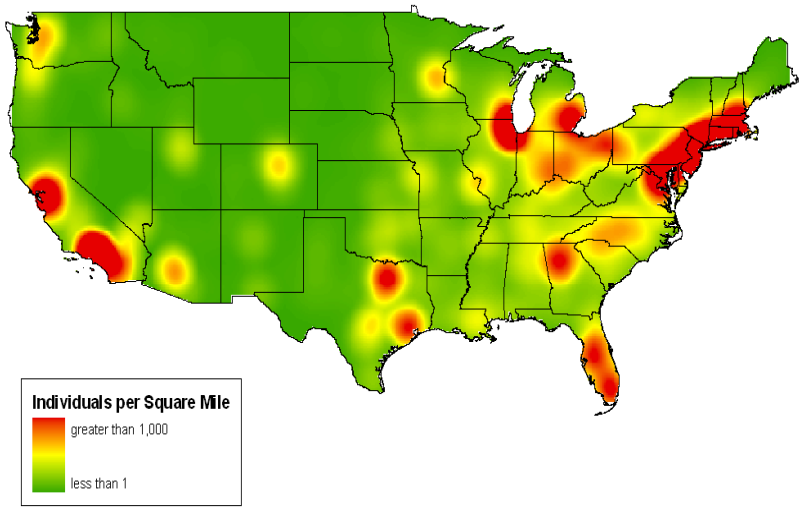
- $1.6 Billion investment (450 MW park)
- $200+ million direct economic impact for Delaware
- State-wide economic development: Delaware as offshore staging hub
- Brings up to 500 construction and up to 80-100 O&M jobs to Delaware
- Brings large contracts to Delaware ports
  - Construction
  - Operations and Maintenance
- Wind technician training at DelTech
- Delaware union jobs
- New businesses locate in places where electricity is affordable and stable-priced
- No negative, possible positive effect on tourism

# Why Offshore Wind

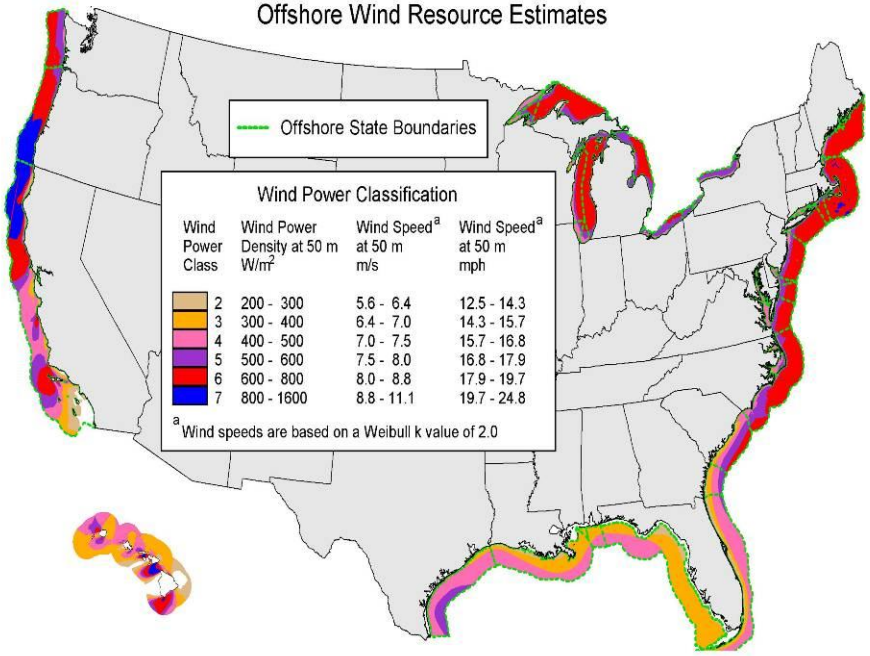
# Supply Aligned With Demand

## 28 of coastal states use
## 78% of the electricity in the U.S.

Population Density of the Counterminous United States




Offshore Wind Resource Estimates



# Offshore Wind Energy Works

- Offshore wind turbines In Europe generate electricity 70-90% of the time
- Sites identified by Bluewater will generate electricity 85 – 89% of the time

# European offshore wind experience

- 18 years experience with offshore wind projects
  - 30 wind parks totaling 2,056 MW in 8 countries
  - Tens of thousands of MW in development & construction
- Leaders: Denmark, UK, Netherlands, Sweden
  - Over 2,000 MW permitted in the UK, 25,000 MW goal in Germany
- Post-construction monitoring of potential environmental impacts is continuing – with no significant impacts identified

# OFFSHORE WIND WORKS

- Offshore wind parks: 38 in 9 countries
- Operational: Since 1991
- Current installed capacity: 2,056 MW

- Parks under construction: 17 Wind Parks with 3,500 MW
- Order book of Turbines, December 2009: **5,900 MW**

- UK Round 3: **34,000 MW Awarded**
- Received permits in Europe: 52 Wind Parks with **16,000 MW**

- Global wind total: **157,900 MW** generates 340 TWh/ year, eliminating 204 million tons of CO2.

- U.S. = 35,000 MW or equivalent of 100% of electricity of more than **9.7 million households in the US,** with 39% average annual growth rate, 2005-9

# The Development Process

# Desired Qualities of an Offshore Wind Energy Site

- Avg. winds stronger than 18 mph
- Constructible water depths
- No significant water use conflicts
- Environmentally compatible areas
- Accessible transmission & ports
- Large available project area footprint

# Five Pillars of Developing an Offshore Wind Project

- Wind Resource
- Site Control / Access
- Permits
- Interconnection to Grid
- Buyer of Energy

# Lessons For Success

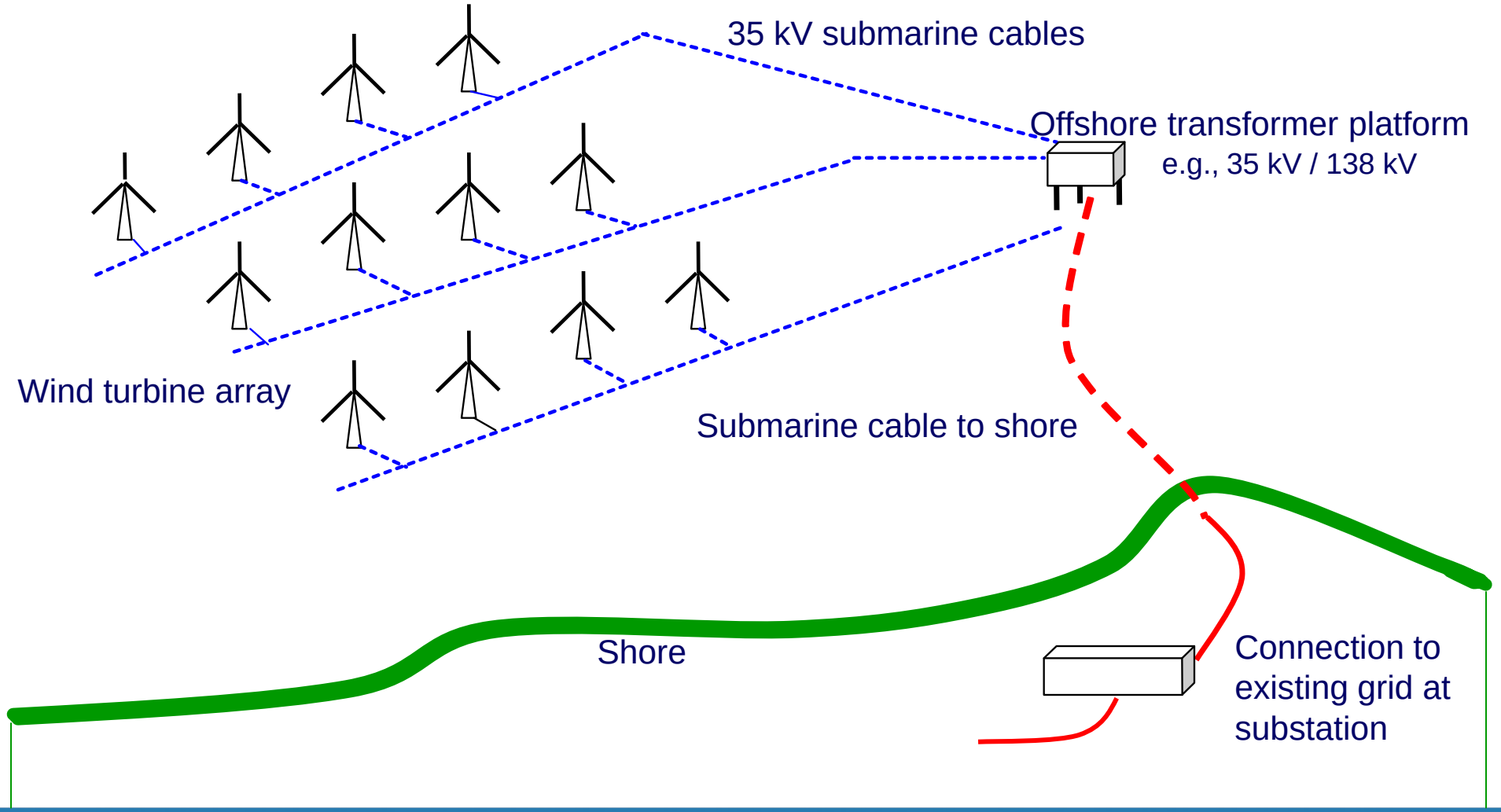
- Engage the public early and often:
  - Identify all stakeholders
  - Educate, educate, educate
  - Honest and transparent communication
  - Visualizations play a critical role in acceptance

# Lessons For Success

- Understand the Permitting Process
- Inter-Relationship Between State Agencies
- The Federal Role – ACOE, Coast Guard, EPA, FWS, FAA, Etc.
- Great Lakes – understand submerged land lease procurement
- Transparency and Clarity

# Offshore Wind Construction

# Offshore electrical design

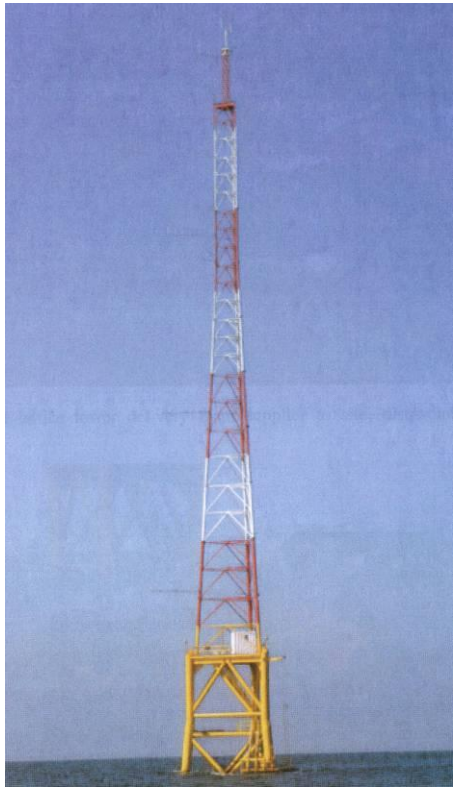


# Met Tower Installation

## Met Tower Designs

Cape Wind

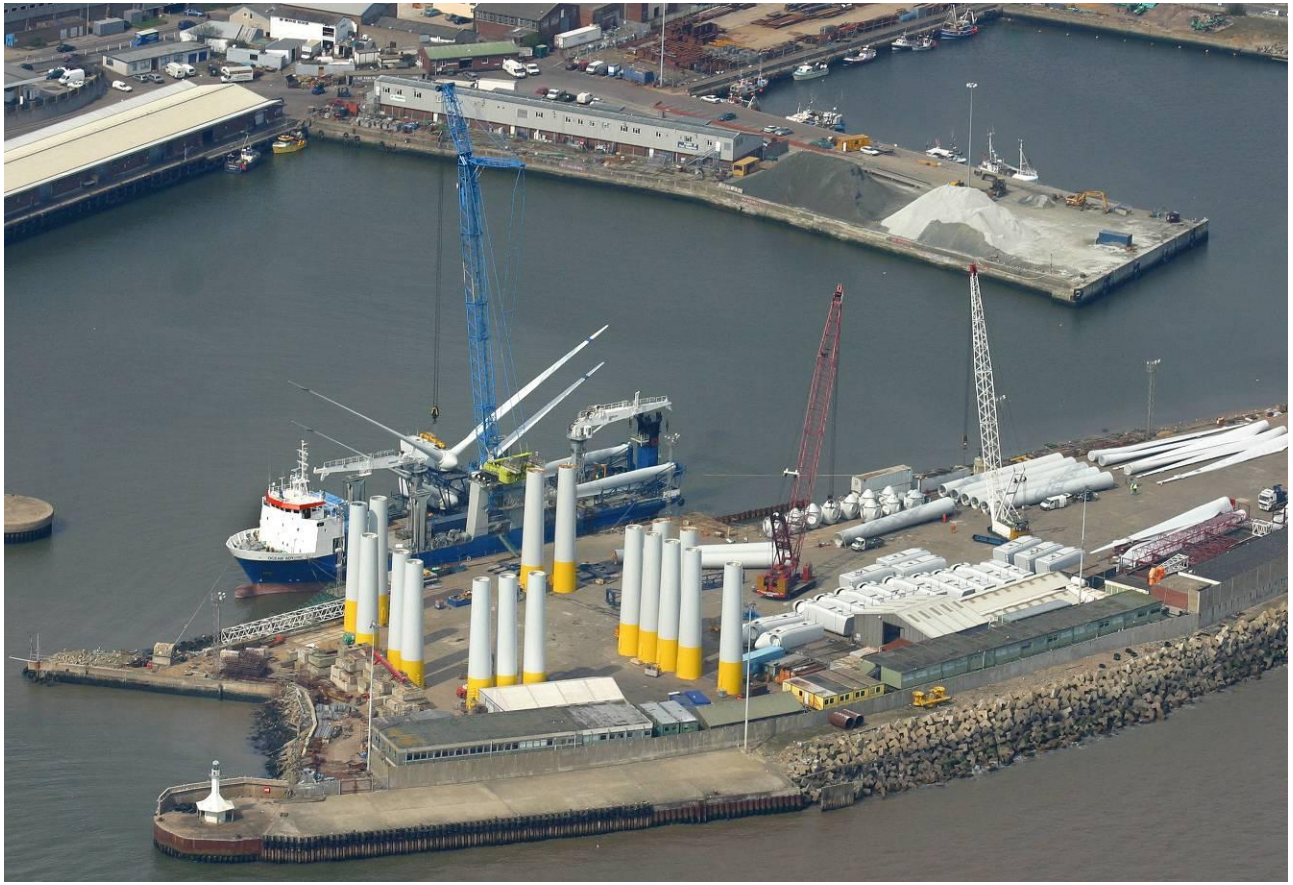
Horns Rev



W.E.S.T.

# Staging Port Development

## Receive and Pre-Assemble Components



Scroby Sands, Source: www.2004ewec.info

# Foundation Installation

## Handling a Monopile

Source: RPS Energy Presentation

# Installing Transition Piece Between Tower And Foundation

# Turbine Installation

## Assembling a Tower and Lifting a Bunny Ear

Source: www.mammoetvanoord.com

# Sub-sea Electrical Cable Installation

## Cable Laying Vessels at Work

Source: www.q7wind.nl

Source: we at sea presentation

Source: www.hornsrev.dk

# Offshore Substation Installation

## Lifting a Transformer Platform

# Activities can continue around the turbines

- Boats are welcome in our wind parks, can maneuver freely inside of them
- Clearance from water surface to blade tip at “six o’clock” position is about 100 feet

# Thank You

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